

PROCESS FOR MAKING DECORATIVE GRASS

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BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention generally relates to methods and apparatuses for making decorative such grass with the method including three embodiments with the plastic material, such as polypropylene, from which the grass is constructed being clear or provided with a colorant, anti-static agent and flame retardant material which is mixed into the resin prior to extrusion of the resin through a film forming die in two of the embodiments of the invention and a strip forming die in the third embodiment of the invention.

2. Description of the Prior Art

Decorative grass has been used for many years in filling Easter baskets and other decorative purposes. Such grass involved the use of scrap plastic material, paper, cellophane, or the like, which is shredded by the use of rotary knives. Previously known processes involved the addition of color of the shredded grass by coating the film with a colorant prior to shredding. However, this colorant often rubs off onto the hands and clothes of a person handling the grass and also frequently washes off when water comes into contact therewith. Previous techniques employed the addition of flame retardants to the surface of the grass but the flame resistance is quite highly variable and often fails to meet the requirements of the Federal Hazardous Substances Act and little or no static control is provided. When shredding paper-type material into decorative grasses, considerable dust and chaff results from the drying and flaking off of flame retardant agents and from irregularities inherent in a shredding process. In view of existent problems with conventional, well-known decorative grasses constructed from paper, cellophane, and shredded plastic, the use of such grass has been more or less restricted to use with Easter baskets and associated uses for the grass such as when it is used to form a "nest" for candy eggs and other related uses.

SUMMARY OF THE INVENTION

An object of the present invention is to provide a method and apparatus for making decorative grass of plastic material extruded from a resin in which a color, flame retardant and anti-static agent are incorporated prior to extrusion.

Another object of the invention is to provide a method and apparatus for making decorative grass in which plastic strips are annealed and stretched to reduce the thickness and width of the strips to provide desired predetermined dimensions and shape characteristics to the strips prior to the strips being chopped into predetermined length depending upon the requirements of individual uses.

A further object of the invention is to provide a method and decorative grass apparatus for making decorative grass which can be effectively employed for packing Easter baskets, candy boxes, and also used to prepare decorative floral arrangements for all seasons of the year, to safely and decoratively package gifts, prepare window displays, make Christmas wreaths, and for many other decorative uses in which such uses are facil-

itated by the decorative grass of this invention having a greater bulk per unit weight than presently available decorative grasses constructed of paper, cellophane, or plastic, which has been shredded by rotatable knives.

Still another important object of the present invention is to provide a method and apparatus for making decorative grass in which the plastic resin is extruded either in the form of a film or a plurality of narrow strips with the extruded plastic being cooled and, if in film form, being slit into strips after which the strips pass through an annealing and drawing oven having a slow godet at the entrance end and a faster godet at the exit end for stretching or elongating the strips to reduce their thickness and width, after which the stretched or elongated strips are chopped to a desired length and conveyed to a storage area.

A still further object of the invention is to provide a method and apparatus for making decorative grass in accordance with the preceding objects enabling economical manufacture of the decorative grass which avoids or corrects present day problems encountered in the use of commercially available decorative grass.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGS. 1a and 1b is a schematic side elevational view of the apparatus used in one process of making decorative grass.

FIGS. 2a and 2b is a schematic side elevational view illustrating a second embodiment of the apparatus and process for making decorative grass.

FIGS. 3a and 3b is a schematic side elevational view of a third embodiment of the process and apparatus.

FIG. 4 is a perspective view of a segment of one of the strips of grass constructed in accordance with this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now specifically to the drawings, FIGS. 1a and 1b illustrate schematically the apparatus employed in carrying out the first process for constructing decorative grass and includes an extruder 10 with the hopper 12 thereon driven by a suitable drive mechanism 14 supported on a base 16 or the like which is of conventional structure and includes a film extrusion die 18 for discharging a plastic film 20 in a conventional and well-known manner. The film 20 then passes through a double chill roll stand 22 which includes a pair of chill rollers 24 and 26 through which chilled water passes. The particular construction of the extruder, extrusion die 18 and air knife 28 associated therewith are of conventional construction and form no particular part of the present invention.

The plastic film after passing through the double roll chiller 22 passes through a slitter 30 in the form of spaced stationary knives which slit or cut the film into strips or strands of desired width. The slitted web in the form of a plurality of side-by-side strips then enters a godet 32 which is operated at a relatively slow speed as compared to a second godet 34 spaced therefrom. In between the godets 32 and 34 is an annealing and drawing oven 36 which softens the plastic strips by heating